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ABSTRACT

A careful examination of the location of variation in the grammar is advocated as opposed to attempts to cover linguistic generalizations with a single rule. Such an examination may lead to non-deterministic solutions, since there may be two distinct possible derivations for a single surface structure. For instance, in Portuguese, the variation found in the phrase "as casa branca" could result from plural marking throughout followed by deletion of the final two -s's, or from non-application of the plural marking rule in the case of one or both of the last two words. A multiple rule solution may provide no way of distinguishing which rules did or did not apply to produce a given utterance. This approach, unlike extremely complicated rules which attempt to cover all variations, honors the basic concept of separate grammatical levels. (Author/JB)

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# LOCATING VARIATION IN THE GRAMMAR

Gregory R. Guy

In attempting to analyze or describe a linguistic problem, a linguist will occasionally encounter difficulties as to how the analysis or description should be organized. Indeed, for some linguists, the proper organization of grammars should be the primary concern of linguistic theory. Traditionally, the grammars that linguists produce - or imagine themselves producing - are organized into several major sections such as Syntax and Phonology, each of which accounts for different types of linguistic facts. Sometimes, however, the linguistic facts themselves prove to be rather intractable, and resist easy categorization along the lines of our grammar. Not infrequently do we come across things we would like to say about a language which can be stated in several different ways - or worse yet things which cannot be said at all within the confines of our approach. In these cases we must decide where in the grammar these facts will be accounted for. They are especially instructive, for they force us to examine not only the facts themselves, but our methods for dealing with them as well.

The same issues arise in dealing with linguistic variation. There are some linguistic variables for which we can write several distinct variable rules, at different levels of the grammar. Since variable rules are essentially just quantifications of the conventional 'optional' rules, they can in principle be used almost anywhere in a linguistic description. In variational terms, the issue might be restated as "Which rules are variable?"

A classic example of this problem can be found in Labov 1969. This article discusses at some length the question of whether variable copula absence in Black English is due to the failure of syntactic rules to insert the copula in the first place, or to the deletion of an underlying copula by either transformational of phonological rules. Labov examines a number of arguments and ultimately decides in favor of the latter solution, where the copula is present underlyingly and then is deleted by a variable phonological rule which is simply an extension of the Standard English rules of contraction.

This article is instructive not only because it presents an analytical problem of the type we are concerned with, but also for the way it resolves that problem: it ultimately decides in favor of a single variable rule of AUX deletion, which handles all the observed facts of copula absence in one efficient package.

This type of solution is normally the preferred approach in linguistic analysis. In fact, it is a standard method of argumentation in linguistics that one solution is better than another because it requires fewer rules or (a la Chomsky and Halle) fewer symbols. However, I feel that this approach may occasionally

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lead us astray. We may at times encounter linguistic problems for which an "inefficient", multiple-rule solution is the correct one. The attempt to write a single rule to describe such a phenomenon may lead us to do violence to the data on the one hand, and to notions of linguistic structure on the other.

This is the case with the number agreement rules in the popular dialects of Brazilian Portuguese.[1] In the standard Portuguese of the prescriptive grammars, number agreement is entirely obligatory, both within a noun phrase and between subject and verb. Thus the singular NP (1) has the corresponding plural form

1. a casa branca 'the white house'
2. as casas brancas 'the white houses'

(2), where every word bears the plural suffix -S. Also, the singular sentence (3) has the corresponding plural form (4), where

3. Ela fala português. 'She speaks Portuguese.'
4. Elas falam português. 'They speak Portuguese.'

both the subject Elas and the verb falam are marked for plurality.

In the speech of most Brazilians, however, these concordance rules are variable. Often a NP will not have all its words plural-marked, as in (5):

5. as casa branca

Similarly, sentences are often produced with a plural subject but a singular verb, as in (6):

6. Elas fala português. 'They speaks Portuguese.'

How can we account for this variation? Two major approaches are possible. First, we could posit low level (i.e. phonological) deletion rules that remove the segments or features that mark plurality. Hence, for the NP plurals we would have an -S deletion rule[2] such as (7):

7. [+stri] → ⟨Ø⟩/__##

For the verbs we would have a denasalization rule like (8):

8. $[+nas] \rightarrow \langle -nas \rangle / \underline{\quad} \begin{bmatrix} \\ -strs \end{bmatrix} ##$

The second approach would be to make the syntactic agreement rules themselves variable. Since we know that any grammar of Portuguese must contain some valet-like rule which goes through the noun phrase dressing everyone up in the right number (and gender) for the occasion, why not suppose that sometimes this valet rule slips up, letting a few sport coats get in with the tuxedos, as it were. Similarly, with subject-verb agreement,

we know there must be some mechanism for informing the verb about what the subject is doing with respect to number and person. Hence we could handle the observed facts making this a variable rule, so that sometimes the verb just doesn't get the number message.

Each of these approaches would work for a large portion of the data, and each has its advantages and disadvantages. A common tendency in linguistic argumentation would be to adduce evidence demonstrating that one of them is correct, or accounts for the problem more efficiently, and then discard the other one. However, I believe that the facts of the matter demonstrate that both are correct, and both processes are actually operating in popular Brazilian Portuguese.

First let us consider the phonological deletion rules. The evidence that they must exist comes from non-plural words which can undergo such rules. There are many non-plural words in Portuguese which end in -S or in an unstressed nasal vowel simply as a part of the root morpheme. Examples are: ônibus 'bus', apenas 'only', lápis 'pencil', menos 'minus', ontem 'yesterday', homem 'man', órfão 'orphan', etc. If these words undergo the same phonological alterations that plurals do, namely the loss of -S or the denasalization of the final vowel, then clearly there are phonological rules at work here, because in these words the only way the deletable segments can be defined is by their phonological features.

In looking at the data, this is in fact what we find. Pronunciations such as meno for menos and home for homem are frequently encountered.[3] Therefore, we conclude that these rules must be included in the grammar.

Now consider the syntactic rules of number agreement. There are several ways of writing such rules, but all of them would operate with some abstract unit indicating plurality - a morpheme, or a syntactic or semantic feature. The actual surface realization of this plural indicator would be the work of later morphophonemic rules. Now it so happens that in Portuguese there are several different such surface markers of plurality, especially in the verbal system. In other words, there are many words where the singular-plural opposition is marked by more than just an -S suffix or vowel nasalization. In the verbal system we have such pairs as fez-fizeram 'he-they did', falou-falaram 'he-they spoke', diz-dizem 'he says-they say', and most extreme of all - é-são 'is-are'. In the nominal system we have plurals with a stem vowel change, such as ôvo-óvos 'egg-eggs'; several classes of words with rather extensive alterations of the end of the word in the plural, such as fácil-fáceis 'easy', and nação-nações 'nation-nations'; and finally classes of words where an epenthetic /i/ appears before the suffix, as in vez-vezes 'time-times' and dor-dores 'pain-pains'. Let us label all these different forms rather loosely as "irregular" plurals. The effect of the simple phonological deletion rules on such irregular plurals would be to produce

forms that were -S-less or denasalized, but still recognizable as plurals! Thus the word vezes, undergoing -S deletion, would yield veze, which is recognizably distinct from the singular vez; fizeram, undergoing denasalization would yield fizeru,[4] which is a far cry from the singular form fez.

Forms such as fizeru and veze do in fact occur. But we also find in our data many constructions of the types given in (9):

9. tres vez 'three time'
   Eles fez isso. 'They made(sg) this.'

Here the unaltered singular forms, vez and fez, are found occurring in positions which are syntactically and semantically plural! Clearly such forms must never have been marked for plurality in the first place. In these cases a variable number agreement rule fails to apply, and hence all the morphophonemic rules which produce the irregular plural form are never called into action.

The types of constructions which must be accounted for are summarized in (10):

| | | | |
|---|---|---|---|
| 10. a. singular | uma vez | Ele fez isso. |
| b. standard plural | tres vezes | Eles fizeram isso. |
| c. phonologically deleted plural | tres veze | Eles fizeru isso. |
| d. syntactic non-insertion of plural | tres vez | Eles fez isso. |

A few other possible solutions can easily be disposed of. One would be to posit a variable syntactic rule that just deletes abstract plural markers. This is simply an ad hoc way of avoiding making the plural marking rules variable, and is completely without justification. A second solution would be to freely order the deletion rules with respect to the other morphophonemic rules. Thus for vezes, if -S deletion occurred before vowel epenthesis, the output would be vez, whereas if it applied after epenthesis, the output would be veze. This approach would correctly generate the full range of constructions (10a-d) for words like vez and dor where epenthesis can be considered to be incidental to - and resulting from - the addition of a simple -S suffix. However, it would be unworkable - in fact, completely irrelevant - in cases like fez-fizeram, where the presence of a final nasalized vowel is merely incidental to the rest of the plural marking. Furthermore, under such a solution we would be completely incapable of accounting for the strong conditioning by syntactic position and morphological category which the data exhibit.[5]

Thus far we have demonstrated that, in order to give an ade-

quate account of the phenomena we are dealing with, both a variable syntactic and a variable phonological rule will be required, even though this may necessitate using more symbols in our grammar. However, we have restricted our attention to popular Brazilian Portuguese. Is it possible that this is just an idiosyncrasy of one dialect? To begin to answer that question, let us now consider a related case in Spanish.

The plural marking system in Spanish is directly analogous to the Portuguese, and several sociolinguistic studies have reported similar tendencies towards variable number agreement. Poplack 1978, a study of plural markers in Puerto Rican Spanish, reported the following findings for overall levels of final /s/ and /n/ deletion (see Table I):

TABLE I (from Poplack 1978)
PERCENTAGE OF DELETION OF /s#/ AND /n#/ BY GRAMMATICAL STATUS

| Grammatical Status | /s#/ | /n#/ |
|---|---|---|
| Inflection | 65% (n=8527) | 9% (n=3390) |
| Monomorpheme | 54% (n=4028) | 1% (n=3457) |

For both /s/ and /n/, the deletion rate is higher for the inflectional markers than for the segments of monomorphemic words: 65% of inflectional /s/ and 9% of inflectional /n/ as against a mere 54% and 1% of the respective non-inflectional segments. Why should it be the case that whole grammatical markers, meaning-bearing units, are deleted more often than mere segments? If we suppose that Spanish has a system analogous to the one just proposed for Portuguese, the answer to this question is obvious. Inflectional markers must clear two potential hurdles in order to be realized on the surface, whereas other segments must pass only one. For example, the /s/ in a word such as mes 'month' is present in the underlying representation of the word and then is removed 54% of the time by the -s-deletion rule before reaching the surface. However, a plural /s/, such as in otras 'others' isn't even inserted into the underlying form whenever the plural marking rule fails to apply, and then when it is inserted, it is still deleted by the -s-deletion rule 54% of the time. The 65% figure for inflectional /s/ thus represents the aggregate of phonological deletion and syntactic non-insertion.

The same logic applies to the /n/'s except that there, for all intents and purposes, the phonological rule is virtually non-existent and only the syntactic rule is really varying. This shows up in Poplack's analysis of the variable constraints on this rule, where she finds that the phonological constraints have no discernible effect. She concludes, therefore, that for her Puerto Rican Spanish data, what is involved is "not a surface

phonological deletion rule, but a grammatical rule."[6]

In conclusion, I am arguing against the necessity of capturing each linguistic generalization with one and only one rule, and for a more careful examination of where variation might be located in the grammar. Notice that this may lead us to non-deterministic solutions. In other words, there may be two distinct possible derivations for a single surface structure. In the Portuguese example, as casa branca could result from plural marking throughout followed by deletion of the final two -S's, or from non-application of the plural marking rule in the case of one or both of the last two words. A multiple rule solution may provide no way of distinguishing which rules did or did not apply to produce a given utterance.

Finally, this also has implications for the way we write our rules. Often in sociolinguistic studies we see monster variable rules attempting to combine social, stylistic, semantic, syntactic, and phonological information all into one rule of Byzantine complexity. Such rules violate the basic concept of separate grammatical levels. I suggest that in these cases it is likely that more than one rule is involved, each operating at a different level of the grammar.

## NOTES

1. The data which are discussed here are drawn from the research project "Competências Básicas do Português", directed by Miriam Lemle and Anthony Naro and funded by the Movimento Brasileiro de Alfabetização and the Ford Foundation. I would like to take this opportunity to thank all of the above, without whom this paper would never have been possible, as well as Tony Kroch, for hours of invaluable discussion; William Labov, for his insightful suggestions; and Shana Poplack, for her stimulating papers and conversation.

2. The symbol -S is used throughout the paper to indicate the word-final sibilant morphophoneme, whose actual phonetic realization depends on the phonetic context and the regional dialect of the speaker. The single feature (+ strident) is presumably sufficient to encompass all the realizations of this morphophoneme.

3. Final orthographic -m represents nasalization of the preceding vowel.

4. The actual phonetic realization of these vowels depends on a number of phonological processes besides nasalization. Hence differences in vowel quality often accompany denasalization. However, this is immaterial to the issues raised here.

5. To account for the observed conditioning under a scheme which relied on variably ordered rules would necessitate the invention of some completely novel mechanism outside the rule system which would select the order of application of the phonological rules according to semantic information, syntactic position, morphological categories, etc.

6. The Brazilian Portuguese data also show higher non-occurrence of inflectional markers than of segments of monomorphemes. To take one typical example, our informant Vanilda omitted 36% of inflectional -S (N=582), but she deleted only 10% of monomorphemic -S (N=620).

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